

CLAIMS

What is claimed is:

1. An apparatus comprising:
a contact point formed on a device layer of a circuit substrate or an interconnect layer on the substrate;
a first dielectric material; and
a different second polymerizable dielectric material on the substrate and separated from the device layer or the interconnect layer by the first dielectric material following polymerization, the second dielectric material comprising a glass transition temperature of at least 250°C and a thermal decomposition temperature of at least 400°C.
2. The apparatus of claim 1, wherein the second dielectric material, after polymerization, comprises an elastic modulus greater than 3 GPa.
3. The apparatus of claim 1, wherein the second dielectric material comprises a polycyanurate moiety.
4. The apparatus of claim 1, wherein after a thermal treatment at a temperature greater than a thermal decomposition temperature of the second dielectric material, the second dielectric material comprises a residue of a volume less than a volume of the second dielectric material prior to exposure to the thermal decomposition temperature.
5. A method comprising:
depositing a dielectric material on a circuit substrate comprising a device layer or a device layer and at least one interconnect layer, the dielectric material comprising a glass transition temperature of at least 250°C and a thermal decomposition temperature of at least 400°C; and

thermally treating the substrate at a temperature greater than the thermal decomposition temperature of the dielectric material.

6. The method of claim 5, wherein the dielectric material comprises a second dielectric material, the method further comprising depositing a different first dielectric material prior to depositing the second dielectric material.

7. The method of claim 6, further comprising depositing a third dielectric material, having a dielectric constant similar to the first dielectric material, on the second dielectric material so that, from the device layer or the at least one interconnect layer, subsequent layers comprise, the first dielectric material, the second dielectric material, and the third dielectric material.

8. The method of claim 5, wherein the dielectric material comprises a polymerizable material.

9. The method of claim 8, wherein after polymerizing, the dielectric material comprises an elastic modulus greater than 3 GPa.

10. The method of claim 8, wherein the dielectric material comprises a polycyanurate moiety.

11. A method comprising:

depositing a first dielectric material on a circuit substrate comprising a device layer or a device layer and at least one interconnect layer;

depositing a different second polymerizable dielectric material on the circuit substrate, the second dielectric material comprising a glass transition temperature of at least 250°C and a thermal decomposition temperature of at least 400°C; and

thermally treating the substrate at a temperature greater than the thermal decomposition temperature of the second dielectric material.

12. The method of claim 11, further comprising, following depositing, polymerizing at least a portion of the second dielectric material.
13. The method of claim 12, wherein the second dielectric material is separated from the substrate by the first dielectric material.
14. The method of claim 12, wherein after polymerizing, the second dielectric material comprises an elastic modulus greater than 3.
15. The method of claim 14, wherein the second dielectric material comprises a polycyanurate moiety.